

- 1 1. An apparatus for tracking errors in an embedded system, the apparatus
2 comprising:
3 a plurality of buffers; and
4 a tracing module communicating with the plurality of buffers, the tracing
5 module configured to make a record of events occurring during operation of a
6 segment of program code which are useful for finding and correcting errors, the
7 tracing module also configured to selectively transmit the record of events to the
8 plurality of buffers.
9
10 2. The apparatus of claim 1, wherein each buffer in the plurality of buffers is
11 configured to store records of a different type of event.
12
13 3. The apparatus of claim 2, wherein the different types of events comprise
14 errors, warnings, and messages.
15
16 4. The apparatus of claim 1, wherein the plurality of buffers are each assigned to
17 a different functional component of the program code.
18
19 5. The apparatus of claim 1, further comprising a merging module configured to
20 combine the records of events stored in the plurality of buffers into a common list of events.
21
22 6. The apparatus of claim 5, wherein the common list of events is in
23 chronological order.
24
25 7. The apparatus of claim 1, wherein the tracing module is configured to time-
26 stamp each record of an event that is stored in the buffers.
27

1 8. The apparatus of claim 5, wherein the merging module is configured to
2 selectively combine the records of events.

3
4 9. The apparatus of claim 2, wherein each record of an event is stored together
5 with information about the event.

6
7 10. The apparatus of claim 9, wherein the information about the event comprises
8 the type of event.

9
10 11. An apparatus for locating errors in an embedded system, the apparatus
11 comprising:

12 a plurality of buffers;

13 a tracing module communicating with the plurality of buffers, the tracing
14 module configured to make a record of events occurring during operation of a
15 segment of program code which are useful for finding and correcting errors and to
16 selectively transmit the records of events to the plurality of buffers, the tracing
17 module configured to timestamp each record of an event that is stored in a buffer;

18 each buffer in the plurality of buffers configured to store a different type of
19 event together with information about the event; and

20 a merging module configured to selectively combine the records of events
21 from the plurality of buffers into a common list of events organized in chronological
22 order.

23
24 12. A method of tracking errors in an embedded system, the method comprising:
25 providing a plurality of buffers configured to store records of events useful in
26 finding and correcting errors;

1 tracing the events occurring during operation of a segment of program code;
2 and
3 selectively storing the records of events within the plurality of buffers.
4

5 13. The method of claim 12, wherein selectively storing records of events
6 comprises storing the records of events according to types of the events.
7

8 14. The method of claim 13, wherein the types of events comprises errors,
9 warnings, and messages.
10

11 15. The method of claim 12, wherein providing a plurality of buffers further
12 comprises assigning each buffer to a different functional component of the program code.
13

14 16. The method of claim 15, further comprising merging a plurality of the records
15 of events stored in the plurality of buffers into a common record of events.
16

17 17. The method of claim 16, wherein merging the list of events comprises
18 organizing the list of events in chronological order.
19

20 18. The method of claim 12, further comprising placing a timestamp on each
21 record of an event stored in the plurality of buffers.
22

23 19. The method of claim 11, further comprising storing information about each
24 event together with the record of the event.
25

26 20. A method of tracking errors in an embedded system, the method comprising:
27

1 providing a plurality of buffers configured to store records of events useful in
2 finding and correcting errors;
3 tracing the events occurring during operation of a segment of program code;
4 selectively storing the records of events within the plurality of buffers;
5 merging records of events from the plurality of buffers into a common record
6 of events; and
7 organizing the list of events in chronological order.
8

9 21. A method of tracking errors in an embedded system, the method comprising:
10 providing a plurality of buffers configured to store records of events useful in
11 finding and correcting errors;
12 tracing the events occurring during operation of a segment of program code;
13 selectively storing the records of events within the plurality of buffers; and
14 storing the records of events in separate buffers according to types of the
15 events, the types of events comprising errors, warnings, and messages.
16

17 22. A computer system having embedded capability for locating errors in a
18 segment of program code, the system comprising:
19 a computer having a processor;
20 a plurality of buffers operating within the processor;
21 a tracing module operating within the processor, communicating with the
22 plurality of buffers, and configured to make a record of events occurring during
23 operation of a segment of program code which are useful for finding and correcting
24 errors and to selectively transmit the record of events to the plurality of buffers, the
25 tracing module configured to timestamp each recorded event that is stored in a buffer.
26
27

1 23. The computer system of claim 22, wherein each buffer in the plurality of
2 buffers configured to store records of a different type of event together with information
3 about the event, and further comprising a merging module configured to selectively combine
4 the records of events from the plurality of buffers into a common record of events organized
5 in chronological order.

6
7 24. The computer system of claim 22, wherein separate buffers in the plurality of
8 buffers is configured to store records of a different type of event, the different types of events
9 comprising errors, warnings, and messages.

10
11 25. The computer system of claim 24, wherein separate buffers in the plurality of
12 buffers are each assigned to a different functional component of the program code.

13
14 26. An embedded system capable of tracking errors in a segment of program
15 code, the embedded system comprising:

16 a plurality of storage locations configured to store records of events useful in
17 finding and correcting errors;

18 means for tracing the events occurring during operation of a segment of
19 program code;

20 means for selectively storing records of the events within the plurality of
21 storage locations; and

22 means for storing the records of events in separate storage locations according
23 to types of the events, the types of events comprising errors, warnings, and messages.